

**Amendment to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1-2 (canceled)

Claim 3 (previously presented): The high-throughput method of claim 21 comprising the use of an automated stainer.

Claim 4 (canceled)

Claim 5 (previously presented): The method according to claim 21 wherein said clinical utility comprises utility as a diagnostic marker for determining whether a patient will respond to a particular therapy.

Claim 6 (previously presented): The method according to claim 5 wherein said therapy is a drug that interacts with at least one target molecule.

Claim 7 (previously presented): The method according to claim 21 wherein said clinical utility comprises validation that said at least one target molecule is relevant in a particular tissue for purposes of treatment selection.

Claim 8 (previously presented): The method of claim 21 wherein said at least one target molecule may be provided from a plurality of sources.

Claims 9-10 (canceled)

Claim 11 (previously presented): The method according to claim 23 wherein said at least one target molecule is a particular DNA or RNA sequence.

Claim 12 (previously presented): The method according to claim 23 wherein said array comprises a plurality of different tissue samples mounted to a solid support.

Claim 13 (canceled)

Claim 14 (previously presented): The method according to claim 23 wherein said instrument comprises:

a first heater for heating a first slide; and

a second heater for heating a second slide;

wherein said first heater is capable of heating said first slide to a temperature different from the temperature of said second slide.

Claim 15 (previously presented): The method of claim 14 wherein said first and second heaters are mounted to a carousel.

Claim 16 (previously presented): The method of claim 14 wherein said instrument further comprises a means for monitoring and controlling the temperature of said first and second heaters.

Claim 17 (currently amended): A tissue microarray comprising:

A. a solid surface;

B. a plurality of different tissues mounted to said solid surface; and

C. a machine readable marking for identifying how said tissues are to be ~~treated~~ stained with a multi-step staining process, in a high-throughput manner, by a staining instrument.

Claim 18 (original): The tissue microarray according to claim 17 wherein said machine readable marking is a bar code label.

Claim 19 (original): The tissue microarray according to claim 17 wherein said solid surface is a glass microscope slide.

Claim 20 (canceled)

Claim 21 (currently amended): A high-throughput method for evaluating the clinical utility of at least one target molecule comprising providing a plurality of tissue microarrays; providing said at least one target molecule; producing, by a multi-step staining process, providing a stain that specifically binds to said at least one target molecule *in situ*; applying, in a high-throughput manner, said stain to said tissue microarrays; determining the extent to which said stain has bound to said at least one target molecule in said tissue microarrays; correlating the extent of stain binding with the clinical utility of said at least one target molecule.

Claim 22 (currently amended): A high-throughput method for determining the clinical utility of target molecules from a plurality of sources comprising providing a plurality of tissue microarrays; providing a plurality of target molecules from a plurality of sources; producing, by a multi-step staining process, providing stains that specifically bind to said target molecules; applying, in a high-throughput manner, said stains to said tissue microarrays; determining the extent to which said stains have bound to said target molecules in said tissue microarrays; correlating the extent of stain binding with the clinical utility of the target molecules.

Claim 23 (currently amended): A high-throughput method for determining whether at least one target molecule has clinical utility comprising providing a stain produced by a multi-step staining

process that specifically binds to said at least one target molecule in a tissue sample, wherein said at least one target molecule was identified using an array; providing an instrument for automatically applying, in a high-throughput manner, said stain to said tissue sample; applying said stain to said tissue sample using said instrument; determining the extent to which said stain has bound to said at least one target molecule; correlating the extent of stain binding with the clinical utility of said at least one target molecule.

Claim 24 (new): A high-throughput method for performing *in situ* hybridization for evaluating the clinical utility of at least one target molecule comprising providing a plurality of tissue microarrays; providing said at least one target molecule; producing, by a multi-step staining process, a stain that specifically binds to said at least one target molecule *in situ*; applying, in a high-throughput manner, said stain to said tissue microarrays; determining the extent to which said stain has bound to said at least one target molecule in said tissue microarrays; correlating the extent of stain binding with the clinical utility of said at least one target molecule.

Claim 25 (new): A high-throughput method for performing *in situ* hybridization for determining the clinical utility of target molecules from a plurality of sources comprising providing a plurality of tissue microarrays; providing a plurality of target molecules from a plurality of sources; producing, by a multi-step staining process, stains that specifically bind to said target molecules; applying, in a high-throughput manner, said stains to said tissue microarrays; determining the extent to which said stains have bound to said target molecules in said tissue microarrays; correlating the extent of stain binding with the clinical utility of the target molecules.

Claim 26 (new): A high-throughput method for performing *in situ* hybridization for determining whether at least one target molecule has clinical utility comprising providing a stain produced by a multi-step staining process that specifically binds to said at least one target molecule in a tissue sample, wherein said at least one target molecule was identified using an array; providing an instrument for automatically applying, in a high-throughput manner, said stain to said tissue sample; applying said stain to said tissue sample using said instrument; determining the extent to which said stain has bound to said at least one target molecule; correlating the extent of stain binding with the clinical utility of said at least one target molecule.

Claim 27 (new): A high-throughput method for performing immunohistochemistry for evaluating the clinical utility of at least one target molecule comprising providing a plurality of tissue microarrays; providing said at least one target molecule; producing, by a multi-step staining process, a stain that specifically binds to said at least one target molecule *in situ*; applying, in a high-throughput manner, said stain to said tissue microarrays; determining the extent to which said stain has bound to said at least one target molecule in said tissue microarrays; correlating the extent of stain binding with the clinical utility of said at least one target molecule.

Claim 28 (new): A high-throughput method for performing immunohistochemistry for determining the clinical utility of target molecules from a plurality of sources comprising providing a plurality of tissue microarrays; providing a plurality of target molecules from a plurality of sources; producing, by a multi-step staining process, stains that specifically bind to said target molecules; applying, in a high-throughput manner, said stains to said tissue microarrays; determining the extent to which said stains have bound to said target molecules in

said tissue microarrays; correlating the extent of stain binding with the clinical utility of the target molecules.

Claim 29 (new): A high-throughput method for performing immunohistochemistry for determining whether at least one target molecule has clinical utility comprising providing a stain produced by a multi-step staining process that specifically binds to said at least one target molecule in a tissue sample, wherein said at least one target molecule was identified using an array; providing an instrument for automatically applying, in a high-throughput manner, said stain to said tissue sample; applying said stain to said tissue sample using said instrument; determining the extent to which said stain has bound to said at least one target molecule; correlating the extent of stain binding with the clinical utility of said at least one target molecule.